

TEST DATA OF WDA30F-12

Regulated DC Power Supply
August 17, 2022

Approved by : Takashi Kajii
Design Manager

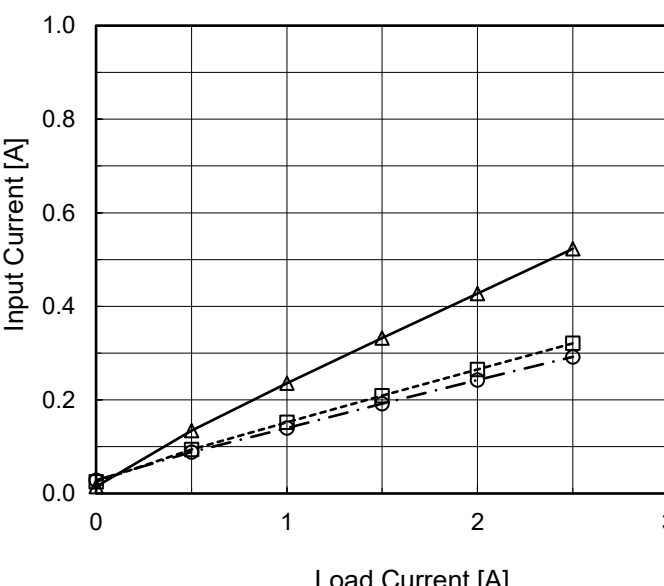
Prepared by : Jeonghoon Yi
Design Engineer

COSEL CO.,LTD.

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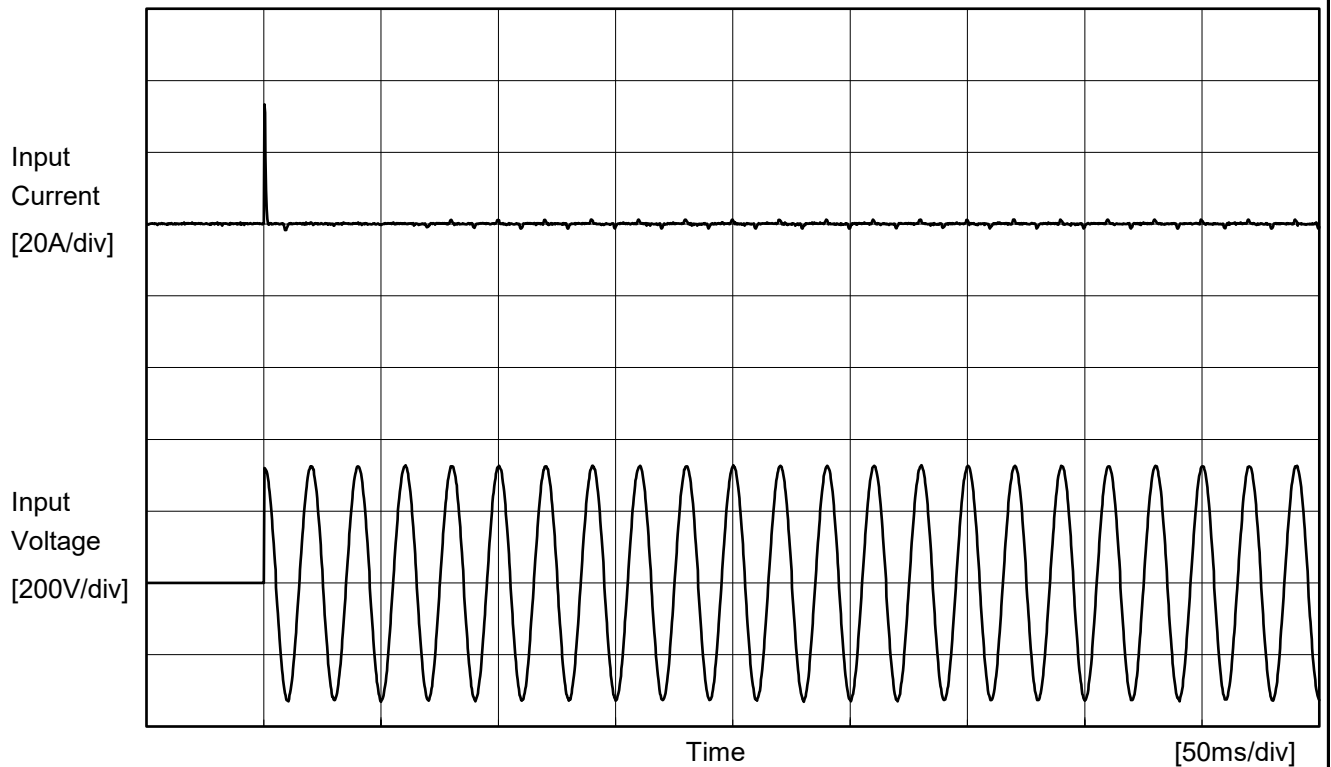
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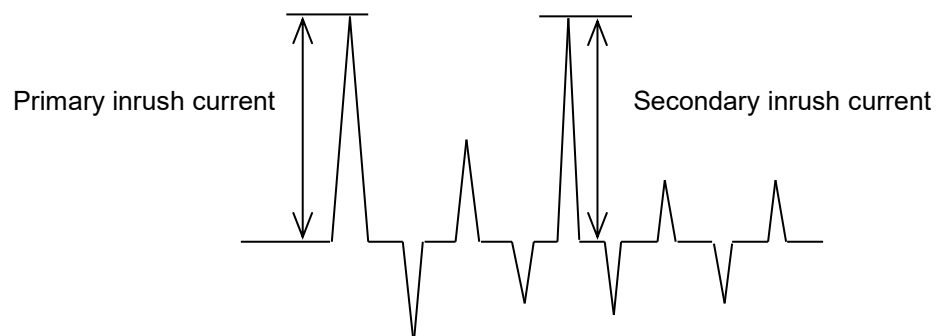
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Model	WDA30F-12	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current	
Object	+12V2.5A	



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 33.3 A
Secondary inrush current 0.0 A



		Temperature 25°C Testing Circuitry Figure C
Model	WDA30F-12	
Item	Leakage Current	
Object	+12V2.5A	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	240 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	0.14	0.33	0.37	Operation
		One of phases	0.27	0.62	0.69	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.32	0.35	Operation
		One of phases	0.27	0.60	0.67	Stand by
	Figure C-3	Both phases	0.14	0.35	0.35	Operation
		One of phases	0.26	0.67	0.66	Stand by

The value for "One of phases" is the reference value only.

2.Condition

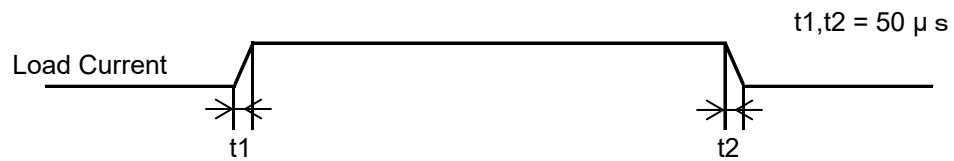
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

Model		WDA30F-12		Temperature25°C Testing CircuitryFigure A
Item		Line Regulation		
Object		+12V2.5A		
1.Graph				
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Model	WDA30F-12																																																					
Item	Load Regulation	Temperature	25°C																																																			
Object	+12V2.5A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div><div></div></div><div><div></div></div><div><div></div></div></div><div><div>Input Volt. 115V</div><div>Input Volt. 230V</div><div>Input Volt. 264V</div></div></div> <div><div>Output Voltage [V]</div><div>12.80</div><div>12.60</div><div>12.40</div><div>12.20</div><div>12.00</div><div>11.80</div><div>11.60</div><div>11.40</div></div> <div><div>0</div><div>1</div><div>2</div><div>3</div></div> <div>Load Current [A]</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>12.053</td><td>12.043</td><td>12.061</td></tr><tr><td>0.5</td><td>12.052</td><td>12.050</td><td>12.049</td></tr><tr><td>1.0</td><td>12.051</td><td>12.050</td><td>12.049</td></tr><tr><td>1.5</td><td>12.050</td><td>12.050</td><td>12.049</td></tr><tr><td>2.0</td><td>12.049</td><td>12.048</td><td>12.047</td></tr><tr><td>2.5</td><td>12.049</td><td>12.048</td><td>12.047</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr></table>		Load Current [A]	Output Voltage [V]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.0	12.053	12.043	12.061	0.5	12.052	12.050	12.049	1.0	12.051	12.050	12.049	1.5	12.050	12.050	12.049	2.0	12.049	12.048	12.047	2.5	12.049	12.048	12.047	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Item	Ripple-Noise	Temperature	25°C																																																			
Object	+12V2.5A	Testing Circuitry	Figure B																																																			
1.Graph																																																						
<div><div><div>Input Voltage 230V</div><div>Load 100%</div></div><div><div>20[mV/div]</div></div><div><div>10[ms/div]</div></div></div>																																																						

Model	WDA30F-12	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+12V2.5A	

Input Volt. 230 V
Cycle 1000 ms



Min.Load (0A) \longleftrightarrow
Load 100% (2.5A)

100 mV/div

20 ms/div

20 ms/div

Min.Load (0A) \longleftrightarrow
Load 50% (1.25A)

100 mV/div

20 ms/div

20 ms/div

Load 50% (1.25A) \longleftrightarrow
Load 100% (2.5A)

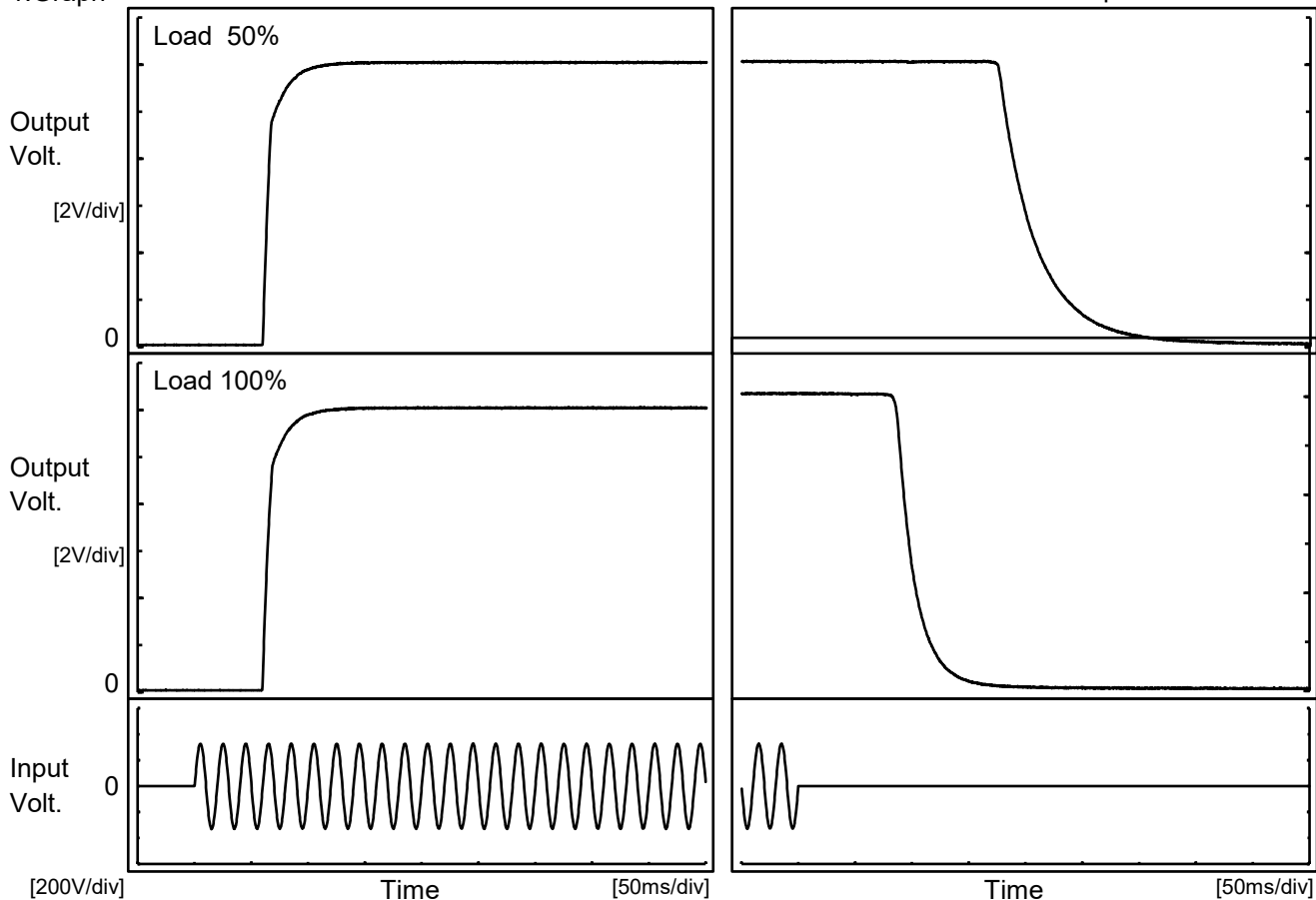
100 mV/div

20 ms/div

20 ms/div

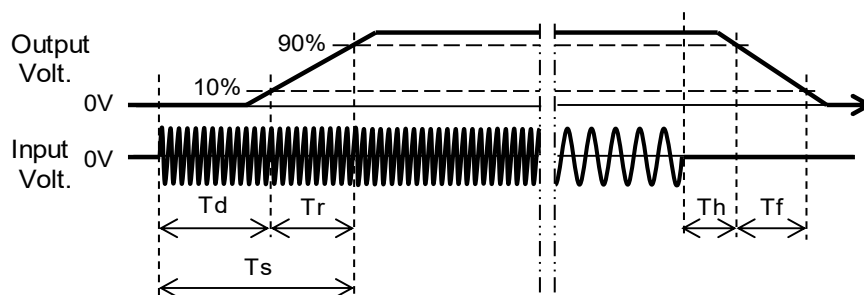
Model	WDA30F-12	Temperature 25°C Testing Circuitry Figure A
Item	Rise and Fall Time	
Object	+12V2.5A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		60.8	19.0	79.8	179.0	73.3
100 %		60.5	19.0	79.5	87.5	36.5



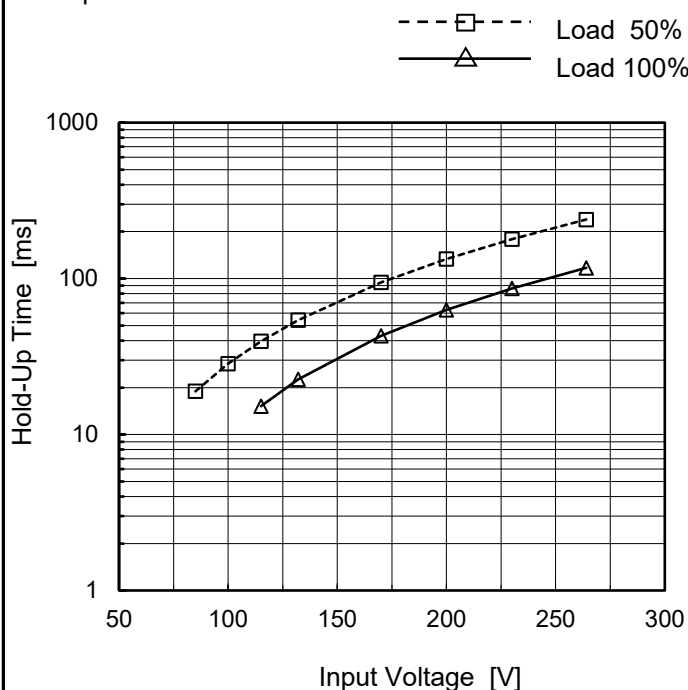
Model WDA30F-12

Item Hold-Up Time

Object +12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	19	-
100	28	-
115	40	15
132	54	23
170	95	43
200	134	63
230	179	86
264	239	117
--	-	-

Model		WDA30F-12		Temperature Testing Circuitry	25°C Figure A																																																	
Item		Instantaneous Interruption Compensation																																																				
Object		+12V2.5A																																																				
1.Graph		<div><div><div>—△—</div>Input Volt. 115V</div><div><div>---□---</div>Input Volt. 230V</div><div><div>-·-○-·-</div>Input Volt. 264V</div></div> <table border="1"><caption>Data for Graph 1: Instantaneous Compensation Time vs Load Current</caption><thead><tr><th>Load Current [A]</th><th>115V [ms]</th><th>230V [ms]</th><th>264V [ms]</th></tr></thead><tbody><tr><td>0.5</td><td>107</td><td>440</td><td>578</td></tr><tr><td>1.0</td><td>52</td><td>226</td><td>301</td></tr><tr><td>1.5</td><td>33</td><td>149</td><td>201</td></tr><tr><td>2.0</td><td>23</td><td>109</td><td>148</td></tr><tr><td>2.5</td><td>16</td><td>86</td><td>117</td></tr></tbody></table> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p>		Load Current [A]	115V [ms]	230V [ms]	264V [ms]	0.5	107	440	578	1.0	52	226	301	1.5	33	149	201	2.0	23	109	148	2.5	16	86	117	2.Values																										
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Model	WDA30F-12	Temperature 25°C Testing Circuitry Figure A																																																																
Item	Overcurrent Protection																																																																	
Object	+12V2.5A																																																																	
1.Graph		2.Values																																																																
<div><div><div></div><div>Input Volt. 115V</div></div><div><div></div><div>Input Volt. 230V</div></div><div><div></div><div>Input Volt. 264V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>12</td><td>3.19</td><td>3.69</td><td>3.87</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	12	3.19	3.69	3.87	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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		Testing Circuitry Figure A
Model	WDA30F-12	
Item	Ambient Temperature Drift	
Object	+12V2.5A	

1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	11.992	11.989	11.989
25	12.039	12.035	12.035
50	12.040	12.039	12.038

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+12V2.5A	

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	38	75
25	38	74
50	38	74

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+12V2.5A	

1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 115V	Input Volt. 264V
-20	15.62	15.62
25	15.91	15.91
50	16.09	16.09

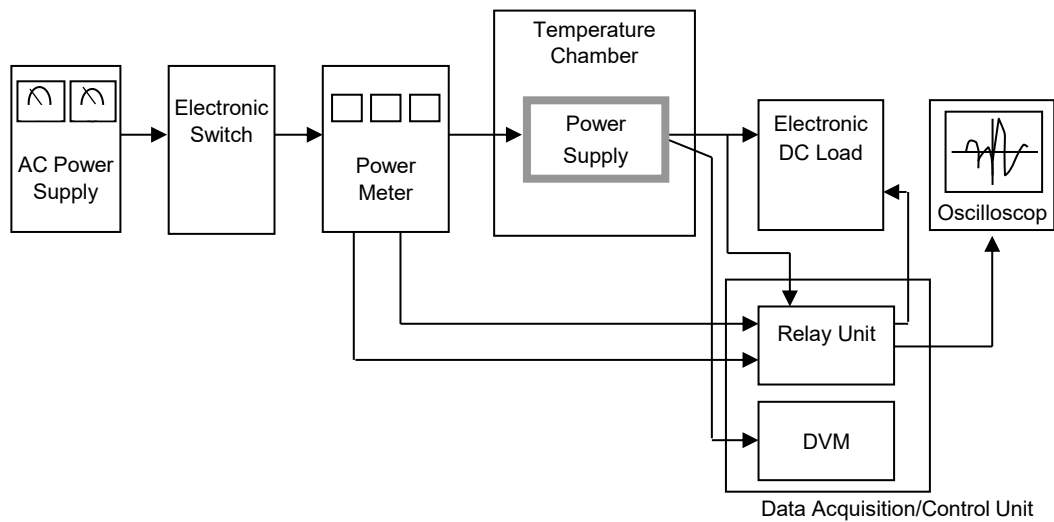


Figure A

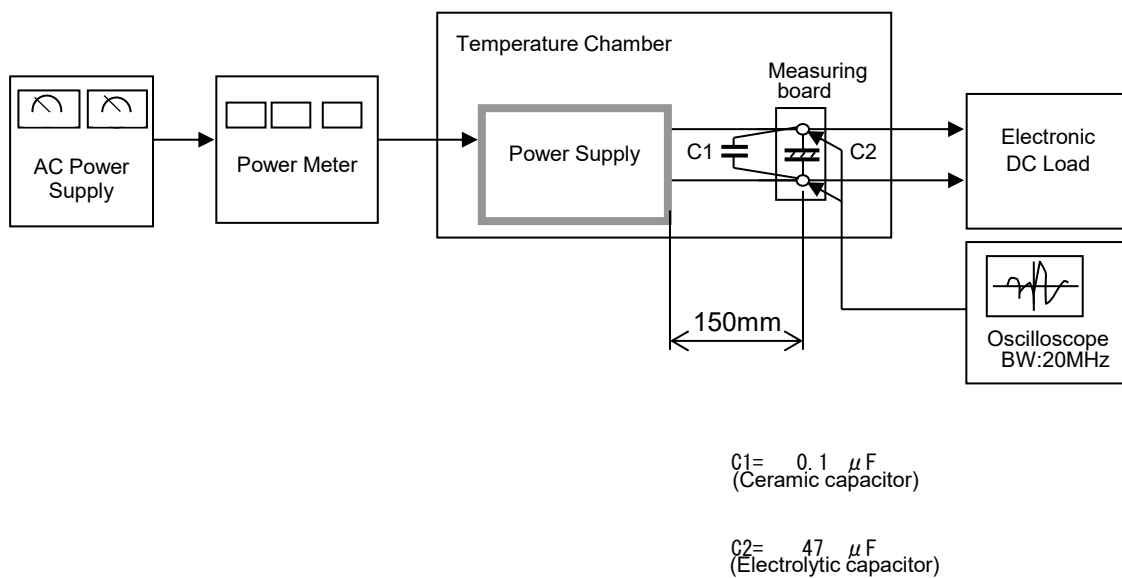


Figure B

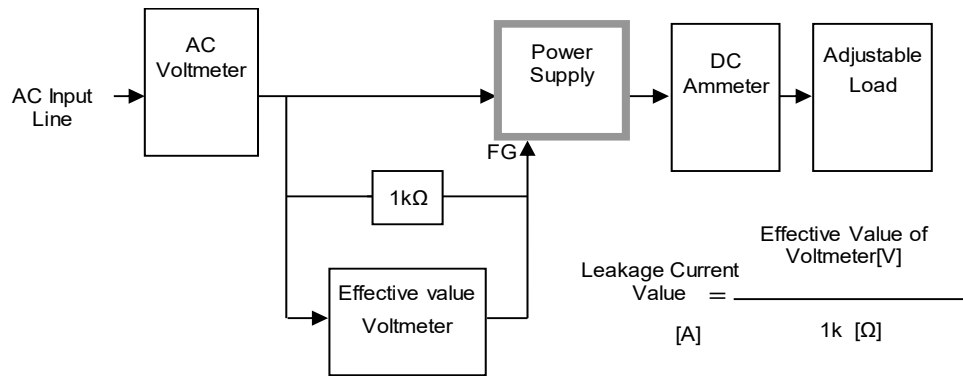


Figure C-1 (DEN-AN)

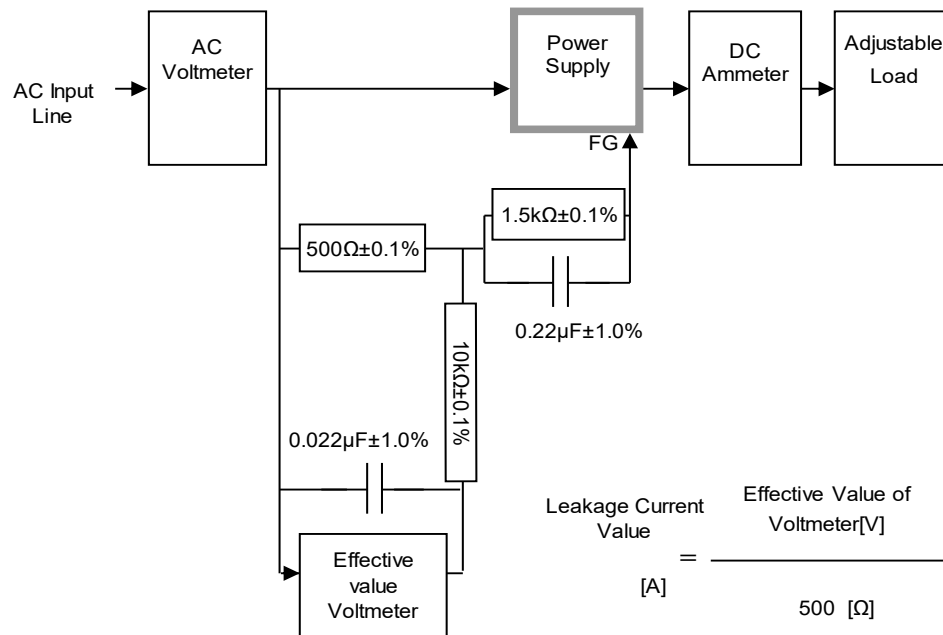


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

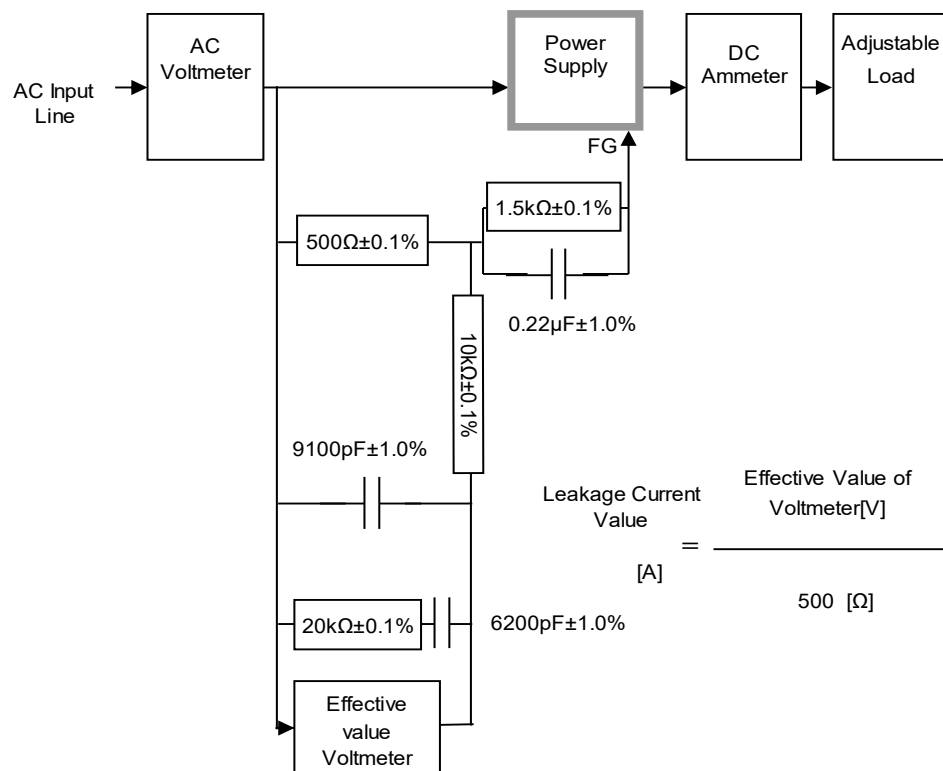


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)